Listing of Claims

1. (Original) A computer readable medium having a data structure stored thereon, said data structure being read and processed by a computer, said data structure for use with handwritten electronic ink, said handwritten electronic ink being mapped to a virtual space and later to an output space, said data structure comprising:

a first portion storing data; and

a second portion storing a first mapping of the data to a virtual space,

wherein said first mapping is of the form of:

$X' = ax + by + c$

$Y' = dx + ey + f$

and a second mapping to said output space is of the form of:

$X'' = gx' + hy' + i$

$Y'' = jx' + ky' + m$

wherein said first mapping and said second mapping are as:

$X'' = (ga + hd)x + (gb + he)y + gc + hf + i$

$Y'' = (ja + kd)x + (jb + ke)y + jc + kf + m$.

2. (Original) The computer readable medium according to claim 1, wherein the first and second portions are part of an ink object.

3. (Original) The computer readable medium according to claim 1, wherein the data include coordinate information for an ink stroke.

4. (Original) The computer readable medium according to claim 1, wherein the data include coordinate information for multiple ink strokes.

5. (Original) The computer readable medium according to claim 1, wherein the mapping is a set of equations.

6. (Original) The computer readable medium according to claim 1, wherein the mapping is a set of equations of the form

~~x~~X' = a~~A~~x + b~~B~~y + c~~C~~

~~y~~Y' = d~~D~~x + e~~E~~y + f~~F~~

where ~~(x,y)~~(X,Y) is a coordinate of the data and ~~(x',y')~~(X',Y') is a coordinate of the

virtual space.

7. (Cancelled)

8. (Original) The computer readable medium according to claim 1, wherein the first mapping is a set of coefficients.

9. (Original) The computer readable medium according to claim 1, wherein the first portion is part of an ink stroke and the second portion is part of a property table containing properties for the ink stroke.

10. (Original) The computer readable medium according to claim 1, wherein the property table includes a third portion for storing ~~a second~~said second mapping of the data to a second virtual space.

11. (Withdrawn) A method for creating a data structure, said method comprising the steps of:

receiving a first ink stroke;

determining a mapping of coordinates associated with the first ink stroke to a virtual space; and

creating the data structure that associates the first ink stroke with the mapping.

12. (Withdrawn) The method according to claim 11, further comprising the step of:

after receiving the ink stroke, creating an empty ink object.

13. (Withdrawn) The method according to claim 11, further comprising the step of:

after determining the mapping, adding at least one additional ink stroke, the additional ink stroke sharing the mapping associated with the first ink stroke.

14. (Withdrawn) The method according to claim 11, wherein the determining a mapping step further comprises the steps of:

determining a native coordinate system;

determining a virtual coordinate system; and,

determining coefficients to transform from the native coordinate system to the virtual coordinate system.

15. (Withdrawn) The method according to claim 11, wherein said determining a mapping step results in a determination of A, B, C, D, E, and F satisfying

$x' = Ax + By + C$

$y' = Dx + Ey + F$

where (x,y) is a coordinate of the native coordinate system and (x',y') is a coordinate of the virtual coordinate system.

16. (Withdrawn) The method according to claim 11, wherein said determining a mapping results in the combination of a first mapping having the form of

$X' = ax + by + c$

$Y' = dx + ey + f$

and a second mapping in the form of

$X'' = gx' + hy' + i$

$Y'' = jx' + ky' + m$

into a third mapping having the form of

$X'' = (ga + hd)x + (gb + he)y + gc + hf + i$

$Y'' = (ja + kd)x + (jb + ke)y + jc + kf + m.$

17. (Withdrawn) A method of using a data structure comprising the steps of:

reading a data structure containing at least one ink stroke;

reading first transform information from a transform table; and

applying a transform based on at least the first transform information to the at least one ink stroke.

18. (Withdrawn) The method according to claim 17, further comprising the steps of:

after the reading transformation information step, determining second transform information; and

combining the second transform information with the first transform information prior to applying the transform to the ink stroke.

19. (Withdrawn) A system for creating a data structure comprising:

an input receiving ink stroke information in native coordinates from a native coordinate system;

a processor determining a transform between the native coordinate system and a virtual coordinate system; and

a storage for storing a data structure containing the ink stroke and the transform.

20. (Withdrawn) The system according to claim 19, wherein the data structure

contains multiple ink strokes that are associated with the transform.

21. (Withdrawn) The system according to claim 20, wherein the association between the ink strokes and the transform is an index referencing a transform table.

22. (Withdrawn) A system for using a data structure comprising:

an ink stroke;

a first transform mapping of coordinates of the ink stroke to a virtual coordinate system;

a storage storing said data structure and said first transform mapping

a processor reading the ink stroke and the first transformation mapping and applying at least the first transform mapping to the ink stroke; and,

an output for outputting the transformed ink stroke.

23. (Withdrawn) The system according to claim 22, wherein the output includes at least one of a printer and a display.

24. (Withdrawn) The system according to claim 22, wherein the transformation mapping includes coefficients for equations that map coordinates of the ink stroke to a virtual coordinate system.

25. (Withdrawn) The system according to claim 22, wherein the processor combines a second transform mapping with the first transform mapping prior to application to the ink stroke.

26. (Withdrawn) The system according to claim 22, further comprising a handwriting recognition module that attempts to recognize the ink stroke in its original coordinates.

27. (New) The computer readable medium according to claim 1, wherein the property table includes a third portion for storing said second mapping of the data to ~~a second virtual~~said output space.